

FILED VIA EFS

PATENT
Docket No. 2456-2-13-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Phillip M. Adams)
)
Serial No.:	10/727,798)
) Art Unit:
Filed:	December 4, 2003) 3629
)
For:	STUDENT-CENTERED, CROSS-INSTITUTIONAL)
	CURRICULUM MANAGEMENT SYSTEM)
	APPARATUS AND METHOD)
)
Examiner:	Gabrielle A. McCormick	

APPEAL BRIEF
REVISED SECTIONS III AND V

Commissioner for Patents
P.O. Box 1450
Alexandria, VA, 22313-1450

Dear Sir:

Responsive to the Notification of Non-Compliant Appeal Brief mailed October 5, 2010, Applicant respectfully submits the present Appeal Brief, Revised Sections III and V, containing only the revised sections required by the Notification, namely, Section III. Status of the Claims and Section V. Summary of Claimed Subject Matter.

III. STATUS OF CLAIMS

Claims 1-25 have been presented at one time or another during prosecution of the present application. Claims 3, 9, 14-16, 21 and 22 have been canceled. Claims 1, 2, 4-8, 10-13, 17-20 and 23-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over various combinations and sub-combinations of Hall (US Pub. No. 2002/0049743) (hereinafter "Hall") in view of Wenger (US Pub. No. 2003/0233242) (hereinafter "Wenger") in view of Fields et al. (US Pub. No. 2003/0055842) (hereinafter "Fields") in view of Curriculum Sequencing (found at <http://www10.org/cdrom/papers/207/node5.html>, published 2001-02-13) (hereinafter "Curriculum Sequencing") in view of ABA ("Data that supports 1 to 1". American Bankers Association. ABA Banking Journal. New York: Oct 2000. Vol. 92, Iss. 10; pg. 60) (hereinafter "ABA") in view of Eguchi et al. ("Rule-based XML". Artificial Intelligence and Law. Dordrecht: 2002. Vol. 10, Iss. 4; pg. 283) (hereinafter "Eguchi").

Applicant appeals the rejection of claims 1, 2, 4-8, 10-13, 17-20 and 23-25 under 35 U.S.C. §103(a) as being unpatentable over the prior art.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Throughout the world, America has long been admired for its postsecondary educational system. Although all postsecondary educational institutions may be grouped into a single class of institutions, in reality, these institutions may be quite varied in their offerings. Despite past successes of the postsecondary education system in the United States, many institutions of higher learning are facing various crises. Much of the failure of the postsecondary educational system as a delivery vehicle for education may be attributed to the fact that the system has been designed

as a business model targeting growth and full employment of its departments, rather than an educational model. The current model stifles competition between educational institutions.

Competition or equal availability between different educational institutions may enable a student to compare and shop for services offered by those educational institutions. Thus, a student may optimize selected preferences such as his or her class schedule, days of the week to take classes, tuition costs, location or timing of courses, and the like. Appellant has conceived of apparatus and methods to compare features of courses and degree programs as one would compare products, to provide some standard characteristics comparable to those of other commodities in an effort to provide more competition between educational institutions and wider more informed choices to students.

A. Claim 1

A student-centered, cross-institutional curriculum management system 280 may be used to mine data from the servers 270a-e for use in managing a student's curriculum. In certain embodiments, the management system 280 may include a web search engine 282, a mining engine 284, an equivalency module 286, an expert system 288, a comparison or organization module 290, a user interface 292, a database 294, and other modules 296. (*See*, pg. 29, lines 1-5; *see also*, Fig. 11.)

For example, a web search engine 282 may be specifically tailored to search for information offered by educational institutions 60 on web servers 270a-e. In presently contemplated embodiments, the web search engine 282 may enable a student to search for information corresponding to selected institutions 60, degree programs 64, courses 126, and the like. A mining engine 284 may include a page parser 298, a crawler 300, an indexing module

302, and the like. For example, a page parser 298 may be programmed to parse XML pages 250a-c, 274, or other available data located on the Internet 271, to extract desired information sought with respect to education. The page parser 298 may work with an indexing module 302 to identify and index information identified by tags 252 in the XML pages 250. In addition, a crawler 300 may be provided to scour the Internet 271 for information corresponding to educational institutions 60, degree programs 64, courses 126, and the like. (*See*, pg. 29, lines 6-16.)

The management system 280 may also include an equivalency module 286 to determine the equivalency of degree programs 64 and courses 126 offered by different institutions 60. For example, although institutions 60 may offer courses 126 of identical or similar subject matter, these courses 126 may be identified with distinct course numbering systems. Thus, in certain embodiments, the equivalency module 286 may function by comparing the content of these courses 126 to identify equivalency therebetween. In certain cases, equivalency may be determined by specific policies of educational institutions 60 with respect to the transfer of credits therebetween. (*See*, pg. 29, line 17 through pg. 30, line 2.)

The management system 280 may also include an expert system 288 to assist a student in planning, optimizing, and completing a degree program 64. The expert system 288 may identify selected preferences that a student may have with respect to a selected curriculum, and may plan the curriculum by retrieving information in accordance with the preferences. (*See*, pg. 30, lines 3-6.)

The management system 280 may also include a comparison or organization module 290 for use by a student or other entity to compare or organize selected institutions 304, degree

programs 306, courses 308 offered by institutions 60, or other criteria 310, as needed. A user interface 292 may function to enable a user to interact with the management system 280. For example, a user interface 292 may receive data in response to interrogatories presented to a user. Likewise, the user interface 292 may enable a user to select preferences with respect to his or her curriculum. The user interface 292 may also present, organize, and compare data, as needed, for a user. (*See*, pg. 30, lines 7-14.)

Likewise, the management system 280 may include a database 294 including a database engine 312 and records 314. The database engine 312 may be effective to store, retrieve, modify and search records 314 within the database 294. Records 314 within the database 294 may include records corresponding to student information 316, student preferences 318, degree programs 320, indexes for searching the web 322, indexes 324 of information that has been mined over the Internet, equivalency tables 326 containing information with respect to normalizing the equivalency of courses 126 offered by various institutions 60, as well as other records 328. (*See*, pg. 30, lines 15-21.)

Referring to Figure 6 (and described in Appellant's specification on pages 20-21), while continuing to refer generally to Figure 5, requirements 175 may be organized into a degree dependency graph, such as a degree tree structure 180. A degree tree structure 180 simply represents one example of a dependency graph that may be used in accordance with the invention. Other types of dependency graphs may include linked lists, double linked lists, content-addressable memory structures, networks, or other topologies. (*See*, pg. 19, line 19 through pg. 20, line 2; *see also*, Figs. 5-6.)

A degree tree structure 180 may be considered a map or path to earn a degree 64. For example, requirements 175 or entries 175 within a degree tree structure 180 may be satisfied by general education 84, lower division major 170, upper division major 96, and elective courses 88 satisfying the graduation 82 and degree 88 requirements. The degree tree structure 180 may show relationships between requirements 175, such as prerequisites 175a for other courses 175c. (*See, pg. 20, lines 3-7.*)

Likewise, other courses 175d, 175e may be corequisites within the degree tree structure 180. Some courses 175f may serve as prerequisites for multiple other courses 175g-j. If desired, the degree structure 180 may be divided up into a series of quarters, trimesters, or semesters 182a-c so a time may be estimated for completing a degree 64. (*See, pg. 20, lines 8-11.*)

For example, selected courses may be taken during a first semester 182 while other selected courses may be taken during a second semester 182b. Likewise, the degree tree structure 180 may be divided into courses 184 taken before admission to a degree program 64, and courses 186 that are taken after admission to a degree program 64. Various requirements 175 within the degree tree structure 180 may be satisfied by several different courses 126. Others may be satisfied only by completing a specific course. (*See, pg. 20, lines 12-17.*)

As stated, the degree tree structure 180 represents a path or map to complete a degree 64 at a selected institution 60. However, once the degree tree structure 180 is established, a student may be able to satisfy particular requirements 175 at other more preferred institutions 60. Thus, once the degree tree structure 180 is established, a student may be able to take courses 126 at another institution 60. This may enable a student to more efficiently achieve a degree 64. (*See, pg. 20, line 18 through pg. 21, line 2.*)

B. Claim 20

A student-centered, cross-institutional curriculum management system 280 may be used to mine data from the servers 270a-e for use in managing a student's curriculum. In certain embodiments, the management system 280 may include a web search engine 282, a mining engine 284, an equivalency module 286, an expert system 288, a comparison or organization module 290, a user interface 292, a database 294, and other modules 296. (*See, pg. 29, lines 1-5; see also, Fig. 11.*)

For example, a web search engine 282 may be specifically tailored to search for information offered by educational institutions 60 on web servers 270a-e. In presently contemplated embodiments, the web search engine 282 may enable a student to search for information corresponding to selected institutions 60, degree programs 64, courses 126, and the like. A mining engine 284 may include a page parser 298, a crawler 300, an indexing module 302, and the like. For example, a page parser 298 may be programmed to parse XML pages 250a-c, 274, or other available data located on the Internet 271, to extract desired information sought with respect to education. The page parser 298 may work with an indexing module 302 to identify and index information identified by tags 252 in the XML pages 250. In addition, a crawler 300 may be provided to scour the Internet 271 for information corresponding to educational institutions 60, degree programs 64, courses 126, and the like. (*See, pg. 29, lines 6-16.*)

The management system 280 may also include an equivalency module 286 to determine the equivalency of degree programs 64 and courses 126 offered by different institutions 60. For example, although institutions 60 may offer courses 126 of identical or similar subject matter,

these courses 126 may be identified with distinct course numbering systems. Thus, in certain embodiments, the equivalency module 286 may function by comparing the content of these courses 126 to identify equivalency therebetween. In certain cases, equivalency may be determined by specific policies of educational institutions 60 with respect to the transfer of credits therebetween. (*See*, pg. 29, line 17 through pg. 30, line 2.)

The management system 280 may also include an expert system 288 to assist a student in planning, optimizing, and completing a degree program 64. The expert system 288 may identify selected preferences that a student may have with respect to a selected curriculum, and may plan the curriculum by retrieving information in accordance with the preferences. (*See*, pg. 30, lines 3-6.)

The management system 280 may also include a comparison or organization module 290 for use by a student or other entity to compare or organize selected institutions 304, degree programs 306, courses 308 offered by institutions 60, or other criteria 310, as needed. A user interface 292 may function to enable a user to interact with the management system 280. For example, a user interface 292 may receive data in response to interrogatories presented to a user. Likewise, the user interface 292 may enable a user to select preferences with respect to his or her curriculum. The user interface 292 may also present, organize, and compare data, as needed, for a user. (*See*, pg. 30, lines 7-14).

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mined over the Internet, equivalency tables 326 containing information with respect to normalizing the equivalency of courses 126 offered by various institutions 60, as well as other records 328. (*See*, pg. 30, lines 15-21.)

C. **Claim 23**

A student-centered, cross-institutional curriculum management system 280 may be used to mine data from the servers 270a-e for use in managing a student's curriculum. In certain embodiments, the management system 280 may include a web search engine 282, a mining engine 284, an equivalency module 286, an expert system 288, a comparison or organization module 290, a user interface 292, a database 294, and other modules 296. (*See*, pg. 29, lines 1-5; *see also*, Fig. 11.)

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DATED this 2nd day of November, 2010.

Respectfully submitted,

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